

Rhodoneura turbatalis, nov.

♂. Palpi, frons, head, and collar chestnut-red; body and wings pale pinkish grey; abdomen with a brown dorsal band and a prominent blackish-brown spot on the penultimate segment, ultimate segment and anal tuft concolorous with the body: wings rather sparsely covered with brown even striations; fore wings with the outer half suffused with brown, except for a small space on the hinder margin beyond the middle; hind wings with a broad suffused brown medial band; a triangular ochreous-white patch on the costa near the apex, including two small brown costal spots; a black dot above vein 5 near the outer margin; marginal line brown; cilia on fore wings ochreous, with brown patches; cilia on the hind wings ochreous brown, without patches. Underside as above, but the ground-colour is nearly white and there is no band on the hind wings; legs concolorous with the body, without markings.

Expanse of wings $1\frac{2}{10}$ inch.

Khasia Hills; a fine series.

Both the above are allied to *R. atripunctalis*, Walker, from Java, but are quite distinct.

Family Hydrocampidæ.

Piletocera chrysorycta.

Semioceros chrysorycta, Meyrick, Trans. Ent. Soc. 1884, p. 320.

Nacoleia contingens, Moore, Lep. Ceylon, iii. p. 273, pl. clxxix. fig. 8 (1885).

Meyrick's type came from Duaringa, Queensland, Moore's from Ceylon: I have it from both localities and also from Sarawak, and I cannot see how they can be separated; they have not a character which is not common to both.

LXV.—Notes on Subspecies of European Shrews (*Sorex* and *Neomys*). By G. E. H. BARRETT-HAMILTON.

IN continuation of my studies of European and British Mammalia in the British Museum of Natural History I find amongst the shrews two very distinct subspecific forms, the extremes of which are very clearly marked. The one a water, the other a common shrew, were trapped by Mr. C. G. Danford in the same region in the Southern Carpathians at

altitudes varying from 1500 to 5500 feet. They may be described as follows:—

Sorex araneus carpathicus, subsp. n.

Size.—The collector's measurements indicate an animal slightly smaller, but with relatively longer tail, than *S. araneus typicus* of Britain.

Colour in winter above from base of tail to occiput nearly black, the face and sometimes the upper surface of the head lighter, gradually becoming brown on the flanks; below, including inner surfaces of all four legs, dirty light yellow or brown, the colour of the upperside encroaching considerably upon the belly. Line of demarcation moderately distinct, running on each side from a point between angle of mouth and nose to the shoulders, thence to the thighs and base of the tail, dividing inner and outer surfaces of all four legs to the wrists and ankles. Hidden portions of the hair everywhere blackish slate.

Tail bicoloured, the upper surface near "bistre"*, the lower between "isabella color" and "drab."

Feet between "prout's brown" and "hair-brown."

A single specimen in partial summer coat is near grizzled "mummy-brown" above, below yellower than specimens in winter coat.

Dimensions in millimetres of nine Specimens.

	Head and body.	Tail.	Hind foot.	Ear.
Maximum	70	47	14	7
Mean	67.1	45.2	12.66	5.33
Minimum	56	41	11	..
Mean of 162 British specimens.	72	38.75	12.8	7.6

I am unable to distinguish the *skull* from that of British shrews.

Hab. Hatzeg, Transylvania, Southern Carpathians, at altitudes of 1500-5500 feet.

Type (a female), no. 3. 2. 2. 4 of British Museum Collection, taken at Hatzeg, 30th November, 1902, altitude 5500 feet. Dimensions:—Head and body 64 mm., tail 46, hind foot 13, ear 7.

This is an interesting mountain-form of "saturated"

* Names of colours placed in inverted commas are taken from Mr. Robert Ridgway's 'Nomenclature of Colors,' 1886.

coloration, conspicuously darker than British or Scandinavian forms of *S. araneus*, and lacking the markedly tricoloured arrangement prevalent in specimens from the continental plain.

Neomys fodiens naias, subsp. n.

Size.—The collector's measurements indicate an animal of about the same size as the British form, but with slightly longer tail and larger ears and feet.

Colour above near black, sometimes with a tuft of whitish hairs just behind each ear; below glossy or silvery "cream," sometimes almost white; line of demarcation distinct, its course as in the *Sorex* described above. Hidden portions of the hairs above "blackish slate," below lighter and almost approaching "plumbeous."

Tail bicoloured similarly to the body and with inferior "keel" of whitish hairs.

Feet dusky to silvery grey, the inner surfaces darker: soles nearly black, thickly fringed with whitish hairs.

Dimensions in millimetres of ten Specimens.

	Head and body.	Tail.	Hind foot.	Ear.
Maximum	84	66	20	7
Mean	77.1	60.7	18.8	6.6
Minimum	68	56	18	5
Mean of 11 British specimens.	85.4	53.27	17.1	8.4

The *skull* has a basilar length of 18 to 20 mm.; as compared with skulls of British specimens, the rostral region is somewhat more attenuated and the upper canine somewhat more conspicuous.

Hab. Hatzeg, Transylvania, Southern Carpathians, at altitudes of 1500 to 2000 feet.

Type (a female), no. 3. 11. 8. 11 of British Museum Collection, taken at Nechesh Galben, Hatzeg, 3rd November, 1902, altitude 2000 feet. Dimensions:—Head and body 79 mm., tail 66, hind foot 19, ear 7.

This beautiful water-shrew far excels the British form in brilliancy and contrast of coloration. Nearly all the continental water-shrews which I have been able to examine are of more silvery-white tints on the under surface than the British, but the Transylvanian seems to present an extreme of the series.

The specimens in the British Museum indicate that the

common shrew of the continental plain is subspecifically distinct from the representatives of the species occurring in Britain, Scandinavia, or in the mountain-ranges of Europe. The latter are dully coloured forms, whereas the shrew of the plain is a large brilliantly tricoloured form, having a band of intermediate colour interposed on the flanks between the colours of the upper and under surfaces. The appropriate subspecific name for the shrew of the plains would appear to be *S. tetragonurus*, Zimmermann (Geog. Gesch. &c. ii. p. 383, 1780), while Mr. Miller has bestowed on two mountain forms the subspecific names of *alticola* (from Switzerland) and *euronotus* (from the Pyrenean foot-hills)—see Proc. Biol. Soc. Wash., April 25, 1901, pp. 41-45.

Since the dull coloration of the British water-shrew entitles it to subspecific rank, it should be known as *Neomys fodiens ciliatus* (Sowerby), Brit. Misc. t. xlix. p. 103 (1805).

LXVI.—Notes on European Species of the Subgenus *Pitymys* (Genus *Microtus*). By DR. C. I. FORSYTH MAJOR.

1. *Microtus (Pitymys) duodecimcostatus* (Selys).

Arvicola duodecimcostatus, De Selys-Longchamps, Rev. Zool., Année 1839, p. 8; id. Etudes de Micromammalogie (Liège, 1839), p. 110, pl. iii. fig. 4 bis.

This species rests on two skeletons, both presenting the anomaly of twelve (instead of thirteen) ribs, which De Selys considered to be a specific character. One of the skeletons is from the neighbourhood of Geneva ("des environs de Genève"); De Selys had received it from the well-known Geneva palæontologist Professor Pictet de la Rive: the second skeleton, in the Paris Museum, is from the neighbourhood of Montpellier. The former, being the first mentioned in both the above-quoted papers, must be considered the type of "*Arvicola duodecimcostatus*."

The specimen from Montpellier was, in 1854, identified by Z. Gerbe as the "*Arvicola incertus*, Selys," from Southern France, and is therefore a *Pitymys*. "Il y a, sous tous les rapports, une si parfaite similitude entre la tête osseuse de l'*A. incertus* et celle du squelette à douze paires de côtes, que le Muséum d'histoire naturelle de Paris tient de M. Olivier, sous le nom de *Mus (Arvicola) œconomus*, que je n'hésite pas à identifier ce prétendu *Mus œconomus*